



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,397	11/19/2003	Steve J. Lofland	42P15277	9724

8791 7590 06/06/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN  
12400 WILSHIRE BOULEVARD  
SEVENTH FLOOR  
LOS ANGELES, CA 90025-1030

EXAMINER

LEO, LEONARD R

ART UNIT PAPER NUMBER

3753

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/718,397

Applicant(s)

LOFLAND ET AL.

Examiner

Leonard R. Leo

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 10-15 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15 and 19-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

The amendment filed on February 15, 2006 has been entered. Claims 1-6, 10-15 and 19-26 are pending. The final Office action mailed December 15, 2005 is withdrawn due to the rejection of dependent claims 21-24.

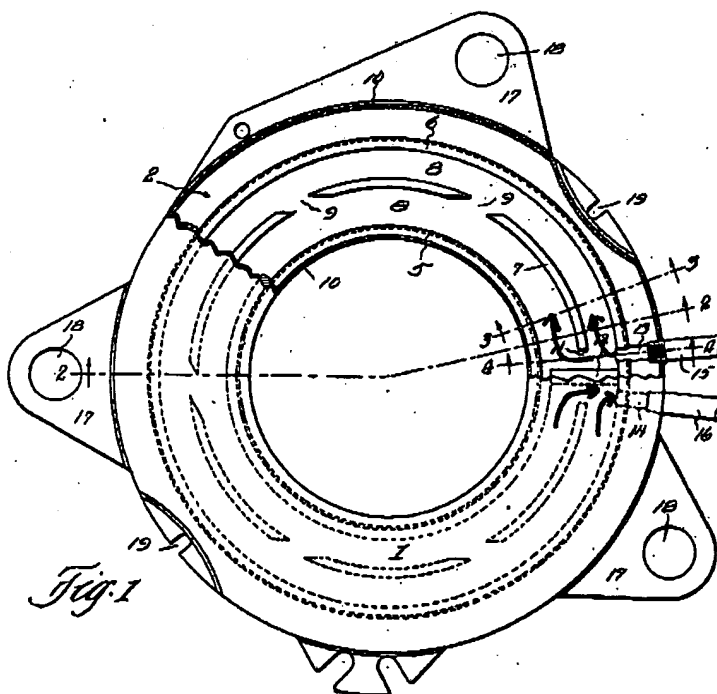
***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Vandergrift. Vandergrift (Figure 2-5) discloses a first member 1 with semi-circular channel walls 3, 4 interlaced with a second member 2 with semi-circular channel walls 5, 6, 7 to provide two fluid flow paths having different directions (marked-up Figure 1 below).



The first fluid flow path from fluid inlet 13 turns immediately into the outer channel 8 proceeding until it turns immediately into the fluid outlet 14. The second fluid path extends radially inward or straight from the fluid inlet 13 and turn into the inner channel 8 beyond the semi-circular wall 7 proceeding until it turns immediately toward the fluid outlet beyond the semi-circular wall 7.

The recitation of “for cooling an electronic component” is considered to be a statement of intended use, even if claimed, does not merit patentable weight unless the body of the claim refers back to, is defined by, or otherwise draws life and breadth from such intended use. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bronander in view of Tomchak.

Bronander discloses all the claim limitations except first and second members having channel walls.

Tomchak discloses a heat exchanger comprising a plurality of fluid flow paths between inlet 34 and outlet 24 defined by first and second members 14, 15 having channel walls 26, 27, 30, 31 for the purpose of ease of manufacture. When the fluid flow path is small, it is easier to

Art Unit: 3753

form channels from two separate members as taught by Tomchak, rather than form channels in a single member as disclosed by Bronander.

Since Bronander and Tomchak are both from the same field of endeavor and/or analogous art, the purpose disclosed by Tomchak would have been recognized in the pertinent art of Bronander.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Bronander first and second members having channel walls for the purpose of ease of manufacture as recognized by Tomchak.

Regarding claims 3 and 12, the fluid flow paths of Bronander are symmetric.

Regarding claims 5 and 14, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Therefore, the "inlet" at the center of the members is structurally met by Bronander.

Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandergrift in view of Fraas et al.

The device of Vandergrift lacks tapered channel walls.

Fraas et al discloses tapered fins/ribs make more efficient use of material than fins/ribs of uniform thickness.

Since Vandergrift and Fraas et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Fraas et al would have been recognized in the pertinent art of Vandergrift.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Vandergrift tapered fins/ribs for the purpose of making efficient use of material as recognized by Fraas et al.

Claims 19 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandergrift in view of Miyata et al.

The device of Vandergrift lacks a combination with an electronic component.

Miyata et al discloses a system comprising a wafer 5 mounted on support 16 including a heat exchanger 40 (Figure 6) for the purpose of controlling the temperature of the wafer.

Since Vandergrift and Miyata et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Miyata et al would have been recognized in the pertinent art of Vandergrift.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the device of Vandergrift in combination with a wafer for the purpose of controlling the temperature thereof as recognized by Miyata et al. Note the very similar structure of Miyata et al in Figure 6 and Vandergrift.

Regarding claims 25-26, Miyata et al discloses refrigerator 49 coupled by tubing 46b, 47a with pumps 45a, 45b. Inherently, a fan provides cooling to the refrigerator on the heat rejection side of the process.

Claims 19-23 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bronander in view of Tomchak as applied to claims 1-5 and 10-14 above, and further in view of Miyata et al, as applied to claims 19 and 25-26 above.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bronander in view of Tomchak further in view of Miyata et al as applied to claims 19-23 and 25-26 above, and further in view of Fraas et al, as applied to claims 6 and 15 above.

***Response to Arguments***

Applicant's arguments have been fully considered but they are not persuasive.

Regarding claims 5, 14 and 23, applicant does not traverse the citation of *Ex parte Masham* which is relied upon by the Examiner. See MPEP 2114 for further guidance. The region containing the last fluid flow path of Bronander is read the "center."

With respect to the Fraas reference, the Examiner does not appreciate the insinuation that the Examiner fabricated the publication date of the reference. For applicant's convenience a copy of the title page including copyright date, which originally appears on the back of the title page, is provided. Applicant is welcome to peruse this reference book at the Examiner's office or at the Library of Congress. The secondary reference of Fraas teaches one of ordinary skill in the art to employ tapered fins/ribs for the purpose of making efficient use of material.

With respect to claims 25-26, a typical refrigeration system includes at least a compressor, an evaporator, an expansion device, and a condenser. Fans or blowers are employed at the evaporator and condenser to improve heat exchange. An air conditioner for an automobile or household has these components, which applicant's might be aware of.

No further comments are deemed necessary at this time.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

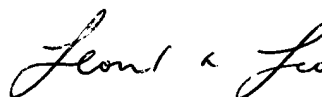
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LEONARD R. LEO  
PRIMARY EXAMINER  
ART UNIT 3753

May 30, 2006